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ABSTRACT

Analysis of two Restructuring constructions in Italian, "equi" and "raising" structures, suggests that while lexical functional grammar (LFG) does not offer the kind of analysis previously used on this kind of structure, it does offer an insightful and interesting analysis of Restructuring in Italian. This approach treats Restructuring sentences as monoclausal at all levels, in both functional and constituent structure. Evidence is drawn from several relation-changing rules and from movement and deletion rules. In the analysis proposed, the grammatical relations for the sentence as a whole come from the rightmost verb, which is the clause nucleus, and the intermediate verbs are actually auxiliaries without the argument-taking properties of verbs. (MSE)

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RESTRUCTURING IN ITALIAN: AN LFG ANALYSIS

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Restructuring constructions in the Romance languages have received much attention in the past several years (e.g., Rizzi, 1982; Aissen and Perlmutter, 1983; Davies and Rosen, 1985; Napoli, 1981; Burzio, 1981, 1983).[1] The constructions included in such discussions include causative, 'equi', and 'raising' structures. There is much converging evidence for a monoclausal analysis of these constructions. I will restrict my attention to the so-called 'equi' and 'raising' sentences.[2] A certain class of equi and raising verbs, including verbs of motion (e.g., *venire* 'come'; *andare* 'go'), aspectuals (e.g., *cominciare* 'begin'), and verbs with modal-like interpretations (e.g., *volere* 'want'; *potere* 'be able to'; *dovere* 'should, must') display a set of properties that seem to indicate that they are monoclausal at some level. I will call this set of verbs *Restructuring verbs*, and the constructions with the monoclausal characteristics *Restructured* sentences. Rizzi (1982) introduces the term Restructuring for these clauses and suggests that a transformation has taken place in their derivation, taking a biclausal deep structure to a monoclausal surface structure. Most of the other analyses of these constructions come to similar conclusions. Burzio's (1981, 1983) and Aissen and Perlmutter's (1983) versions of Restructuring all involve processes which derive the surface form from a biclausal deep structure. LFG does not offer the possibility of this kind of analysis, as one syntactic level does not *derive* from another in the sense that surface structure derives from deep structure in GB or RG. I will argue that LFG does offer an insightful and interesting analysis of Restructuring in Italian, however. I will argue for a analysis which treats Restructuring sentences as monoclausal at all levels, that is, in both functional structure and constituent structure.

Ishikawa (1985) looks at constructions in Japanese which are semantically similar to the Italian control sentences, but with lexically derived compound verbs. He argues that these sentences are monoclausal at c-structure but biclausal at f-structure. He gives evidence involving grammatical relations that indicate that a biclausal functional structure is necessary in order to account for the data. In Italian, however, no such evidence for a biclausal functional structure is available. The transformational theories' claim of a biclausal deep structure seems to be based mainly on the fact that the Restructuring sentences are closely related, syntactically and semantically, to biclausal sentences. In GB a biclausal analysis is forced by mechanisms of the theory such as trace binding and theta-role assignment for semantic interpretation. However, I can think of no theory-independent reason to assign a biclausal representation to restructured sentences at any level. Evidence for functional monoclausality is very strong; furthermore, semantic arguments exist in favor of a monoclausal analysis of the type that I am presenting. Napoli (1981) argues for treating the 'upstairs' verbs in Restructuring sentences as auxiliary verbs, basing her claims on semantic evidence. She looks at examples from Italian literature of places where an author chose to restructure or not to restructure; she observes that when restructuring is chosen, the function of the restructuring verb is to "add information about the sister verb's state or action, without expressing an independent state or action in itself" (p. 864); whereas when Restructuring is not chosen, the action expressed by the verb carries more independent semantic weight. Though the semantic difference is subtle, it lends support to the analysis that I am proposing. I will present syntactic arguments for an analysis of Restructuring sentences as basically

monoclausal, with the restructuring verbs functioning as auxiliaries.

The first piece of evidence that restructured sentences are functionally monoclausal comes from the placement of clitic pronouns.[3] The expected position of a clitic pronoun associated with an infinitive is attached to the end of the infinitive. However, the class of verbs that allow Restructuring, described above, permit an alternative position. Clitic pronouns associated with the infinitive complement of these verbs are allowed to attach to either the infinitive, as expected (1), or to the tensed verb (2).[4]

1. **Mario vuole comprarlo.**
   mario wants buy-it
   mario wants to buy it.

2. **Mario lo vuole comprare.**
   mario it wants buy
   mario wants to buy it.

With non-restructuring verbs, clitics can only attach to the infinitive complement:

3. **Piero deciderà di comprarlo.**
   Piero will-decide to buy-it
   Piero will decide to buy it.

4. ***Piero lo deciderà di comprare.**
   Piero it will-decide to buy
   Piero will decide to buy it.

If the restructuring verbs are treated as XCOMP-taking predicates, then we cannot state in a general way what grammatical function the fronted clitic has in the sentence. There are two problems with such an analysis. The first is the problem of how to distinguish between restructuring and non-restructuring verbs. Sentences with both -- 2 and 4, for example -- would have the same structure. In the rule in 5, the *ad hoc* feature *REST* is introduced to take care of this problem. Lexical entries for XCOMP taking predicates will be marked + or - REST. The rule in 5 will then ensure that the predicate is one that allows Restructuring when the clitic fills the function of the XCOMP's object.

5. VP -> ?CL V ?VP
   ((↑OBJ) = ↓ | ↑ = ↓ (↑XCOMP) = ↓
   (↑XCOMP OBJ) = ↓
   (↑ REST) =c +)

This rule will work for the sentences given above. However, the more serious problem with this analysis comes when we realize that the clitic can 'climb' over more than one verb, as long as all of the verbs in the chain belong to the class of restructuring verbs.[5]

6. **Mario lo vuole andare a comprare**
   mario it wants go to buy
   Mario wants to go buy it.

7. **Mario lo ha voluto andare a comprare.**
   mario it has wanted go to buy
   Mario wanted to go buy it.

As soon as a second XCOMP is added, the rule above will fail without some *ad hoc* device to pass the clitic OBJ down to the appropriate level. In 6, the function specified for the clitic would have to be (^XCOMP XCOMP OBJ). In 7, still another level is added; the path could become indefinitely long, making a rule like 5 completely unworkable. On the other hand, if we treat the perfect auxiliary and restructuring verbs as auxiliaries in a clause nucleus whose predicate is the rightmost verb (*comprare* in the sentences above), there is no problem at all in stating the functional role of the clitic.

8. **VP -> CL AUXP V**
   (↑OBJ) = ↓ (↑AUX) = ↓ ↑ = ↓

This amounts to the claim that restructuring 'verbs' like *volere* and *andare* actually have two distinct lexical entries: one is a full argument-taking predicate, and the other is an auxiliary. The auxiliary form does not have the argument-taking properties of a verb. Instead, the subcategorization properties of restructured clauses is determined by the predicate of the clause. In a non-restructured sentence, the form of *volere*, for example, which is specified as a V in the lexicon would be present; while in the restructured sentences, the AUX form would be present.

9. **volere V <SUBJ XCOMP>**

10. **volere AUX**

To generate the auxiliary forms, I propose a recursive AUXP rule, given here in a simplified form. According to this rule, an AUX can take an AUX complement, and any number of auxiliaries of any type can occur in any order in a single clause. The restrictions on generation of AUX's will come from semantic and cognitive limitations.

11. **AUXP -> AUX ?AUXP**
    ↑ = ↓ (↑AUX) = ↓

Below is an example of an f-structure for a restructured sentence:

12. **Mario lo vuole andare a comprare.**
    Mario wants to go buy it.

```
[ PRED   'comprare  <SUBJ OBJ>'
  OBJ    [ PRED  'pro'
           PERSON 3
           NUMBER sg
           GENDER masc ]
  SUBJ   [ PRED  'mario'
           PERSON 3
           NUMBER sg ]
  AUX    [ PRED  'volere'
           TENSE  present
           PERSON 3
           NUMBER sg
           AUX    [ PRED  'andare' ]]]
```

Note that these rules produce an f-structure in which AUX's are embedded in AUX's; the information about the order in which AUX's occur in the sentence is thus retained. This is necessary for semantic interpretation; it is not sufficient to state that the sentence has features like [+ volition], [+ inceptive], [+ abilitative], etc. in sentences with the AUX's *volere* 'want', *cominciare* 'begin', and *potere* 'be able' because 13 and 14 below do not have the same meaning.

13. Giovanni vuole cominciare a lavorare.
    giovanni wants begin to work
    Giovanni wants to begin to work.

14. Giovanni comincia a volere lavorare.
    giovanni begins to want work
    Giovanni is beginning to want to work.

Another rule that makes reference to grammatical functions and interacts with Restructuring is Tough-Movement. This rule in Italian is very much like Tough-Movement in English. The object of an infinitive complement of certain adjectives appears as the subject of the adjective clause. In Italian the preposition *da* appears between the adjective and the infinitive in the resulting sentence.

15. È difficile risolvere questo problema.
    it-is difficult resolve this problem
    It is difficult to resolve this problem.

16. Questo problema è difficile da risolvere.
    this problem is difficult to resolve
    This problem is difficult to resolve.

In order to account for Tough-Movement, a disjunction in the lexical entry for the adjectives that allow it is all that is needed. The subject of the adjective is either a 'dummy', i.e., lacking semantic content, or it is the object of the adjective's XCOMP, *risolvere* in the example above. The lexical entry for *difficile* would look in part like the following:[6]

17. difficile <XCOMP> SUBJ

((^SUBJ) = (^XCOMP OBJ) |
(^SUBJ FORM) =c dummy)

Now, Tough-Movement is possible across more than one infinitive following an adjective if all of the intermediate infinitives belong to the class of verbs that allow Restructuring.

18. Maria è difficile da andare a chiamare (perche
Maria is difficult to go to call (because

abita al di là del fiume).
she-lives on the other side of the river)

Maria is difficult to go call for (because
she lives on the other side of the river).

If the adjective's XCOMP does not allow Restructuring, the object of its XCOMP cannot be fronted through Tough-Movement:

19. *Questo lavoro è facile da promettere di finire.
this work is easy to promise comp finish

This work is easy to promise to finish.

If we take the restructuring verbs as XCOMP-taking predicates, then we run into the same problems as we did with clitic placement: we have no way to distinguish between restructuring and non-restructuring verbs, and we cannot state the control relation in a simple way because the path to specify would be indefinitely long. The second problem is slightly more complicated with Tough-Movement than with clitic placement. The subject of the adjective would have to be the *subject* of each intermediate predicate (e.g., *andare* in 18 above), but the *object* of the final predicate (e.g., *chiamare* in 18). On the other hand, these facts can be explained very simply if we treat the restructuring verbs as auxiliaries rather than as XCOMP-taking predicates. This way, exactly the control equations given above for Tough-Movement adjectives can account for Tough-Movement in Restructuring sentences.

The so-called Impersonal Passives offer another very strong piece of evidence in favor of a monoclausal anaylsis of Restructuring. This type of Impersonalization involves a lexical rule which changes the grammatical relations in a sentence. The object of a predicate becomes its subject, and the clitic *si* occurs on the verb. The subject is suppressed on the surface, but its thematic role is interpreted as some unspecified human.

20. Qualcuno vende queste case a caro prezzo.
someone sells these houses at high price

21. Queste case si vendono a caro prezzo.
these houses IMP sell at high price

Someone is selling these houses at a high price.

The lexical rule relating forms like 20 to those like 21 is given here; it is essentially the rule proposed by Baker (1983).

22. V < SUBJ OBJ > <==> V < ∅ SUBJ >
TR_i TR_{ii} TR_i TR_{ii}

where TR_i and TR_{ii} are thematic roles, and TR_i is interpreted as [+ human]

As with Clitic Placement and Tough-Movement, there is a difference in Impersonalization between restructuring predicates and non-restructuring predicates. The restructuring predicates allow the advancement of the object of the lowest infinitive to subject position, while the non-restructuring verbs do not.

23. Queste case si vogliono vendere a caro prezzo.
these houses IMP wants sell at high price
SI wants to sell these houses at a high price.

24. *Queste case si promettono di vendere a caro prezzo.
these houses IMP promise comp sell at high price
SI promises to sell these houses at a high price.

Again, unless we treat the restructured sentences as functionally monoclausal, we cannot easily distinguish between 23 and 24 and we cannot specify a reasonable lexical rule for Impersonalization. However, if we treat the restructured sentence, as a single clause with an auxiliary *volere* 'want', then the simple rule for Impersonalization given above accounts for the data.

Another type of argument is often put forth in favor of a *syntactically* monoclausal analysis of Restructuring; this comes from movement and deletion rules. Phenomena such as Pied-piping with WH-movement rules, Clefting, Right Node Raising, and Complex NP Shift are traditionally used to choose one constituent structure over another. As all of these constructions interact similarly with Restructuring, I will look at WH-movement as representative of them all. In Italian it is possible to pied-pipe an infinitive with a noun phrase in WH-movement.

25. Questi argomenti, a parlarti dei quali verrò
these topics to talk-to-you about which I-will-come

al più presto mi sembrano molto interessante.
as soon as possible to-me seem very interesting

These topics, to talk to you about which I will come
as soon as possible, seem to me very interesting.

However, when Restructuring has taken place, as indicated by the position of the object clitic *ti* before the upstairs verb *verrò*, 'I will come', this kind of Pied-piping is no longer possible.

26. *Questi argomenti, a parlare dei quali ti verrò
these topics to talk about which to-you I-will-come

al più presto, mi sembrano molto interessante.
as soon as possible to-me seem very interesting

This difference between restructured and non-restructured sentences has been explained by reference to constituent structure. According to Rizzi (1982), only a syntactic constituent can be Pied-piped; in 25, the non-restructured sentence, *a parlarti dei quali* is a constituent, a VP, while in the restructured sentence, 26, *a parlare dei quali* is not. Rizzi proposes something like 27 for non-restructured sentences, and 28 for restructured sentences.[7]

27. $[_S$ Io $[_{VP}$ verrò $[_{VP}$ a parlarti di questi argomenti]]]
I will-come to talk-to-you about these topics

28. $[_S$Io ti $[_{VP}[_V$verrò a parlare] di questi argomenti]]
I you will-come to talk about these topics

The structure that I have proposed for restructuring sentences also allows this configurational explanation of the Pied-piping and similar phenomena. That structure is given here:

29. $[_S$Io $[_{VP}$ti $[_{AUXP}$verrò] a parlare di questi argomenti]]
I you will-come to talk about these topics

Other possible configurational structures come to mind as well. Like Rizzi, I found little strong evidence to support one structure over all the others. I chose this one mainly because the formal details of features like verb and auxiliary forms were slightly simpler this way. I am not sure that the choice of c-structure should rely on details like this, but in the absence of other criteria I will take the formal simplification as an argument in favor of this analysis.

In a more recent analysis of WH-movement in LFG (Kaplan and Zaenen, 1986), it is not configurational constituents but functional constituents which are fronted in WH-movement. I will not commit myself to either the syntactic or the functional account of WH-movement in LFG, but I will point out that my analysis of Restructuring is compatible

with the functional account of movement as well as the configurational one. The f-structure for the non-restructured sentence is given here. The Pied-piped WH-movement sentence given above would be permitted with this f-structure because *a parlarti di questi argomenti* is a functional constituent -- the XCOMP.

30. Verrò a parlarti di questi argomenti.

```
[ PRED 'venire  < SUBJ XCOMP >'
  SUBJ    [ PRED  'pro'
            PERSON 1
            NUMBER sg ]
  XCOMP   [ PRED  'parlare <SUBJ  IOBJ> '
            SUBJ  [       ]
            IOBJ  [ PRED 'pro'
                    PERSON 2
                    NUMBER sg ]
            PPADJUNCT     [ PRED 'di'
                            OBJ  [ PRED 'argomenti'
                                   NUMBER pl
                                   DEMONSTRATIVE questi]]]]
```

In the restructured sentence, however, the pied-piping would not be permitted since there is no constituent in the f-structure which comprises only *a parlare di questi argomenti* -- there is no XCOMP.

31. Ti verrò a parlare di questi argomenti.

```
[ PRED   'parlare  <SUBJ IOBJ> '
  IOBJ   [ PRED  'pro'
           PERSON 2
           NUMBER sg ]
  SUBJ   [ PRED  'pro'
           PERSON 1
           NUMBER sg ]
  PPADJUNCT  [PRED 'di'
              OBJ  [ PRED 'argomenti'
                     NUMBER pl
                     DEMONSTRATIVE questi]]
  AUX    [ PRED  'venire'
           TENSE  present
           PERSON 1
           NUMBER sg ]    ]
```

There are a couple of details that must be addressed in order to make the analysis of Restructuring sentences complete. In particular, the generation of the correct surface forms for verbs and auxiliaries and the ordering restrictions on passive forms are not entirely straightforward.[8] Passivization of the rightmost predicate (the clause nucleus), with passive morphology on the main verb, yields an acceptable result. However, a passive form with passive morphology on the auxiliary is not possible.

32. Maria vuole essere invitata.
    Maria wants to be invited

33. *Maria è voluta invitare.
    maria be wanted to invite

This is not surprising, since there is no reason to expect an auxiliary, which does not take arguments, to appear in the passive voice. Still, we need to ensure that the passive AUX *essere* occurs only directly to the left of the main verb, and that if it does appear there, the main verb occurs in the passive form.

The other complication concerns generating the correct form for each AUX and for the main verb (tensed, infinitive, or past participle). The form that a verb or AUX takes is determined by the verb or AUX which immediately precedes it in the surface string. This means that the final AUX determines the form of the main verb. However, because of the embedding of AUX's in both c-structure and f-structure, information about the final AUX cannot reach the main verb in a straightforward way. For this reason it is necessary to create a feature, say *mvform*, which gets passed up to the top level of the AUXP, where it is accessible to the predicate of the clause. The value of mvform comes from the rightmost auxiliary, and its purpose is to impose restrictions on the form of the predicate. In rule 34, the predicate uses this feature to determine what form it should have. This feature also forces the verb to be in the passive form when the passive AUX is the last AUX. The following rules illustrate how this works.

```
34.  VP  ->  CL          ?AUXP                V          ?NP
             ↑OBJ = ↓    ↑AUX = ↓             ↑ = ↓      ↑OBJ = ↓
                       (↑TENSE) = (↓TENSE)
                                {((↑AUX MVFORM) = pass
                                  (↑ PASSIVE) =c + |
                                  (↑AUX MVFORM) = pastpart )
                                  (↑ FORM) =c pastpart |

                                  (↑AUX MVFORM) = inf
                                  (↑FORM) =c inf |
                                  ~(↑AUX)
                                  (↓TENSE)    )
```

```
35.  AUXP  ->  AUX                                    ?AUXP
                 ↑ = ↓                          (↑AUX) = ↓
                                              (↑MVFORM) = (↓MVFORM)
           {((↓PERF) = +
             ((↑AUX FORM) =c pastpart |
              ~↑AUX
              (↑MVFORM) = pastpart )  |

             (↓PASS) = +
             ~↑AUX
             (↑MVFORM) = pass  |

             (↓MODAL) = +
              ((↑AUX FORM) =c inf |
               ~↑AUX
               (↑MVFORM) = inf )
```

I have shown here that in order to handle the range of data concerning Restructuring sentences in Italian, it is necessary to treat them as monoclausal. The evidence comes from several relation-changing rules as well as from movement and deletion rules. In the analysis proposed here, the grammatical relations for the sentence as a whole come from the rightmost verb, which is the clause nucleus, and the intermediate 'verbs' are actually auxiliaries, which do not have the argument-taking properties of verbs. Napoli's semantic arguments for the aux-hood of the restructuring verbs support this analysis. In looking at the movement and deletion rules, I pointed out that this analysis is compatible with either a configurational or a functional explanation of WH-movement.

Notes

[1]*Restructuring* is Rizzi's (1982) term for the phenomena that has been called by various names in the literature: *clause union* in Relational Grammar (Aissen and Perlmutter, 1983 e.g.); *VP movement* in Burzio's (1981) Government Binding Theory analysis. I am arbitrarily choosing Rizzi's term here to describe a certain class of sentence types; it is not intended to express a bias towards any particular analysis.

[2]The perfect auxiliaries *essere* 'be' and *avere* 'have', and the passive auxiliary *essere*, are usually treated together with these control constructions. This discussion is meant to include them, though I will not discuss them explicitly.

[3]The clitic pronouns include direct and indirect object clitics, the locative clitic *ci*, and *ne*, which is used for quantified objects and various other things which I will not go into here. I will focus on the object clitics in my rules, which will be greatly simplified.

[4]Clitic pronouns attach to the left of finite verbs, and to the right of infinitives.

[5]The restrictions on the length of such a restructuring chain are probably cognitively determined.

[6]It does not matter for the present what role *essere* 'be' plays in these sentences. I am inclined to treat it as an auxiliary when it has an adjective complement as well as when it marks the passive voice or the perfective tense/aspect. However, if it is treated as a predicate with an XCOMP complement, this analysis of Tough-Movement will still hold. The subject of the adjective will be controlled by the subject of *essere*.

[7]Actually, Rizzi is non-committal about the structure. He offers two possible structures and says that he can find no strong evidence to support either. In any case, either of his proposed structures has the characteristic described here: the 'downstairs' infinitive plus object is not a constituent in the restructured sentences.

[8]Another detail which complicates the analysis, but which I will not deal with here is the choice of a perfect auxiliary. In Italian the past tense is formed with an auxiliary verb, either *avere* 'have' or *essere* 'be', plus the past participle of the main verb. The class of verbs that take *essere* are the so-called *unaccusative* forms (Perlmutter 1978), including some intransitive verbs, passives, reflexives, and impersonals. Transitive verbs and the other intransitives take *avere*. The choice of perfect auxiliary interacts with Restructuring in some unexpected ways. An account of auxiliary selection is available under the analysis of Restructuring presented here; however, space limitations do not permit me to elaborate on them here.